

What is claimed is:

1           1. An optical receiver, comprising:  
2           an optical input port which receives incoming  
3 wavelength-division multiplexed (WDM) light signals;  
4           transmittable-wavelength-variable filtering means  
5 which allows or permits, of the WDM light signals input  
6 from said optical input port, a light signal in a  
7 predetermined transmittable wavelength bandwidth to pass  
8 therethrough, a central wavelength of said transmittable  
9 wavelength bandwidth being a desired wavelength;  
10          an optical output port which outputs, of the WDM  
11 light signals input from said optical input port, the  
12 remaining light signals at wavelengths which do not pass  
13 through said transmittable-wavelength-variable  
14 filtering means; and  
15          control means which controls the central wavelength  
16 of said transmittable-wavelength-variable filtering  
17 means in such a manner that the level of the light signal  
18 passing through said transmittable-wavelength-variable  
19 filtering means is the maximum.

1           2. An optical receiver as set forth in claim 1,  
2 wherein said transmittable wavelength bandwidth which  
3 passes through said transmittable-wavelength-variable  
4 filtering means is narrower than channel spacing of the  
5 WDM signals.

1           3. An optical receiver as set forth in claim 2,  
2 wherein said transmittable-wavelength-variable  
3 filtering means has a reflective member for reflecting  
4 the remaining light signals at wavelengths which do not  
5 pass through said transmittable-wavelength-variable  
6 filtering means to said optical output port.

1           4. An optical receiver as set forth in claim 1,  
2 wherein said transmittable-wavelength-variable  
3 filtering means has a reflective member for reflecting  
4 the remaining light signals at wavelengths which do not  
5 pass through said transmittable-wavelength-variable  
6 filtering means to said optical output port.

1           5. An optical transmission apparatus, comprising  
2  $N$  optical receivers,  $N$  being an integer number greater  
3 than 2, each of which receivers includes: an optical input  
4 port which receives incoming wavelength-division  
5 multiplexed (WDM) light signals;  
6 transmittable-wavelength-variable filtering means which  
7 allows or permits, of the WDM light signals input from  
8 said optical input port, a light signal in a predetermined  
9 transmittable wavelength bandwidth to pass therethrough,  
10 a central wavelength of said transmittable wavelength  
11 bandwidth being a desired wavelength; an optical output  
12 port which outputs, of the WDM light signals input from

13 said optical input port, the remaining light signals at  
14 wavelengths which do not pass through said  
15 transmittable-wavelength-variable filtering means; and  
16 control means which controls the central wavelength of  
17 said transmittable-wavelength-variable filtering means  
18 in such a manner that the level of the light signal passing  
19 through said transmittable-wavelength-variable  
20 filtering means is the maximum,  
21 the optical output port of the  $i$ th ( $i = 1$  to  $N-1$ )  
22 of said optical receivers being connected to the optical  
23 input port of the  $(i+1)$ th of said optical receivers.

1 6. An optical receiver as set forth in claim 5,  
2 wherein said transmittable wavelength bandwidth which  
3 passes through said transmittable-wavelength-variable  
4 filtering means is narrower than channel spacing of the  
5 WDM signals.

1 7. An optical receiver as set forth in claim 6,  
2 wherein said transmittable-wavelength-variable  
3 filtering means has a reflective member for reflecting  
4 the remaining light signals at wavelengths which do not  
5 pass through said transmittable-wavelength-variable  
6 filtering means to said optical output port.

1 8. An optical receiver as set forth in claim 5,  
2 wherein said transmittable-wavelength-variable

3 filtering means has a reflective member for reflecting  
4 the remaining light signals at wavelengths which do not  
5 pass through said transmittable-wavelength-variable  
6 filtering means to said optical output port.

1 9. An optical transmission apparatus as set forth  
2 in claim 5, wherein an optical amplifier for amplifying  
3 the incoming WDM signals is connected to the first of said  
4 optical receivers.

1 10. An optical transmission apparatus as set forth  
2 in claim 9, wherein at least one optical amplifier is  
3 interposed between two or more of said optical receivers.

1 11. An optical transmission apparatus as set forth  
2 in claim 5, wherein at least one optical amplifier is  
3 interposed between two or more of said optical receivers.

1 12. An optical receiver for receiving a light signal  
2 at an individual wavelength, which is obtained by optically  
3 amplifying incoming wavelength-division multiplexed  
4 (WDM) signals and then demultiplexing the WDM signals into  
5 individual wavelengths, said optical receiver comprising:  
6 transmittable-wavelength-variable filtering means  
7 which allows or permits a light signal in a given  
8 transmittable wavelength bandwidth to pass therethrough,  
9 said given transmittable wavelength bandwidth being

10 narrower than channel spacing of the WDM signals; and  
11 control means which controls a central wavelength  
12 of said transmittable-wavelength-variable filtering  
13 means in such a manner that the level of the light signal  
14 passing through said transmittable-wavelength-variable  
15 filtering means is the maximum.

1 13. An optical transmission apparatus, comprising:  
2 an optical amplifier for amplifying  
3 wavelength-division multiplexed (WDM) signals;  
4 an optical demultiplexer for demultiplexing the WDM  
5 signals received from said optical amplifier into light  
6 signals at separate wavelengths; and  
7 an optical receiver for receiving an individual one  
8 of the separate wavelengths,  
9 said optical receiver including:  
10 transmittable-wavelength-variable filtering  
11 means which allows or permits a light signal in a  
12 given transmittable wavelength bandwidth to pass  
13 therethrough, said given transmittable wavelength  
14 bandwidth being narrower than channel spacing of  
15 the WDM signals; and  
16 control means which controls a central  
17 wavelength of said  
18 transmittable-wavelength-variable filtering means  
19 in such a manner that the level of the light signal  
20 passing through said

21 transmittable-wavelength-variable filtering means  
22 is the maximum.